

## REMARKS

Claims 1-25, 27, 30-32 and 34-35 have been previously canceled. Claims 33, 44 and 45 are currently amended and no new claims have been added or canceled by way of this response. Thus, claims 26, 28-29, 33, 36-50 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

### Response to Rejections Under Section 112:

The Examiner has rejected claim 26 and all claims that depend therefrom under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contends that there is no support in the original disclosure for the limitation: “wherein the casting step includes pouring the molten alloy into a casting mold, and solidifying the molten alloy.” Applicants respectfully submit that paragraphs [0018] and [0019] of the specification teach casting the alloy as a melt. Furthermore, Applicants submit (and the Examiner confirms in the instant Office Action at page 6) that one of ordinary skill in the art of metal alloy casting readily understands and appreciates that the term “casting” as recited in the specification encompasses “pouring the molten alloy into a casting mold, and solidifying the molten alloy” as recited in claim 26.

In light of the above, Applicants respectfully submit that claim 26 complies with the section 112, first paragraph, written description requirement, and request the Examiner to withdraw the section 112, first paragraph rejection.

The Examiner has rejected claims 33, 44 and 45 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended claims 33, 44 and 45 in accordance to resolve the indefiniteness issues and respectfully request the Examiner withdraw the section 112, second paragraph rejections.

Response to Rejections Under Section 103:

Claims 26, 33, 36-38, 44-46 and 50 are rejected under 35 U.S.C. §103(a) as being unpatentable over Genereux et al. (US 4,769,087) in view of *Metals Handbook*. Claims 28, 29, 39, 43, 47 and 48 are rejected under 35 U.S.C. §103(a) as being unpatentable over Genereux et al. in view of *Metals Handbook* and further in view of Vogt et al.. Claims 40 and 41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Genereux et al. in view of *Metals Handbook* and further in view of Heitman et al. (USPN 5,071,059). Claim 42 is rejected under 35 U.S.C. §103(a) as being unpatentable over Genereux et al. in view of *Metals Handbook* and further in view of Vogt et al. and Watter (USPN 2,304,976).

Claim 26:

Applicants' claim 26 recites in part:

... **casting the component from a melt** of the alloy ...;  
**redensifying** the component in a furnace **immediately after the casting step** ...; and  
**overaging** the redensified component, **in an intermediate step**,  
via an overaging heat treatment immediately after the step of redensifying and in the same furnace **without cooling of the redensified component** between the redensifying and the overaging steps ...  
the overaging heat treatment at least in part being carried out **during slow cooling at a cooling rate of 2° to 3°C/min.**

Regarding claim 26, the Examiner has applied Genereux in view of *Metals Handbook*, contending that the combination teaches the invention of claim 26. Applicants respectfully disagree and submit that the above combination would not result in Applicant's claimed invention of claim 26. Specifically, Genereux teaches a heat treating a pre-cast ingot to prepare the ingot for a forging process (col. 4, lines 46-49; Figure 1), not casting a "component from a melt of the alloy" as recited in claim 26. Furthermore, Genereux teaches performing a HIP redensifying treatment on the previously cast ingot, not "**redensifying** the component in a furnace **immediately after the casting step**" as recited in claim 26.

Moreover, the Examiner concedes that "Genereux [does] not to teach the claimed [overaging heat treatment] cooling rate" of 2°C to 3°C/min but the Examiner asserts that it would have been obvious to one of ordinary skill in the art to apply a different cooling rate. Applicants respectfully disagree with the Examiner's assertion and submit that Genereux teaches a cooling rate of less than 20°F/hour (or **0.185°C/min.**). Applicants submit that their inventive cooling rate

is **more than 10 times** faster than that of Genereux and one of ordinary skill in the art would not obtain Applicants' claimed cooling rate as a result of **routine experimentation** contrary to MPEP 2144.05 Section II.

Furthermore, Genereux explicitly teaches away from Applicants cooling rate. Figure 2 shows that the preferred material property, Gamma Prime Size, decreases with increasing cooling rate. The objective of the overaging heat treatment is to grow larger Gamma Prime grains. Therefore, one of ordinary skill in the art would be motivated to reduce the cooling rate as much as possible based on the teaching of Genereux and figure 2, not to increase the cooling rate by more than 10 times to obtain Applicants' claimed cooling rate. In the face of the teachings of Genereux and the order of magnitude difference between the cooling rates of Genereux and that of Applicants, there would be no motivation for one of ordinary skill in the art to continue to experiment with overaging cooling rates to the degree necessary to reach Applicants claimed range. Therefore, there is no motivation to modify Genereux to obtain Applicants' claimed cooling rate and Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness with respect to claim 26.

In light of the above, Applicants respectfully submit that the combination of Genereux in view of *Metals Handbook* does not teach or suggest Applicants' claimed invention as embodied in claim 26. Furthermore, claims 28-29, 33, 36-50 which depend on claim 26 are also patentable at least based on their dependence from claim 26 as well as based on their own merits. Therefore, Applicants respectfully request that the Examiner withdraw the Section 103 rejections and timely pass the application to allowance.

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Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, Applicants respectfully request that the Examiner reconsider the rejections and timely pass the application to allowance. All correspondence should continue to be directed to our below-listed address. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: April 15, 2007

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